





Transferring Energy

CR Design - Test is VERY Severe

Simulates 30mph into a solid barrier

- Same as 2 similar vehicles – both traveling at 30mph in opposite directions – colliding head-on
- Similar to a single vehicle traveling at 60mph crashing into a parked vehicle
- More severe impact than 97.4% of real-world crashes
- Some of the 2.6% are unsurvivable

Managing Energy

- Keep people in the vehicle
- Contact the strongest body parts
- Spread energy over a wide area
- Help the body to slow down
- Protect the brain and spinal cord

Correct Restraint Selection

Car Seat Recommendations for Children

Select a car seat based on your child's age and size, and choose a seat that fits in your vehicle and use it every time.
 Always refer to your specific car seat manufacturer's instructions; read the vehicle owner's manual on how to install the car seat using the seat belt or LATCH system, and check height and weight limits.
 To maximize safety, keep your child in the car seat for as long as possible, as long as the child fits within the manufacturer's height and weight requirements.
 Keep your child in the back seat at least through age 12.

Birth – 12 months

Your child under age 1 should always ride in a rear-facing car seat. There are different types of rear-facing car seats. Infant-only seats can only be used rear-facing. Convertible and 3-in-1 car seats typically have higher height and weight limits for the rear-facing position, allowing you to keep your child rear-facing for a longer period of time.

1 – 3 years

Keep your child rear-facing as long as possible. It's the best way to keep him or her safe. Your child should remain in a rear-facing car seat until he or she reaches the top height or weight limit allowed by your car seat's manufacturer. Once your child outgrows the rear-facing car seat, your child is ready to travel in a forward-facing car seat with a harness.

4 – 7 years

Keep your child in a forward-facing car seat with a harness until he or she reaches the top height or weight limit allowed by your car seat's manufacturer. Once your child outgrows the forward-facing car seat with a harness, it's time to travel in a booster seat, but still in the back seat.

8 – 12 years

Keep your child in a booster seat until he or she is big enough to fit in a seat belt properly. For a seat belt to fit properly the lap belt must lie snugly across the upper thighs, not the stomach. The shoulder belt should lie snug across the shoulder and chest and not cross the neck or face. Remember: your child should still ride in the back seat because it's safer there.

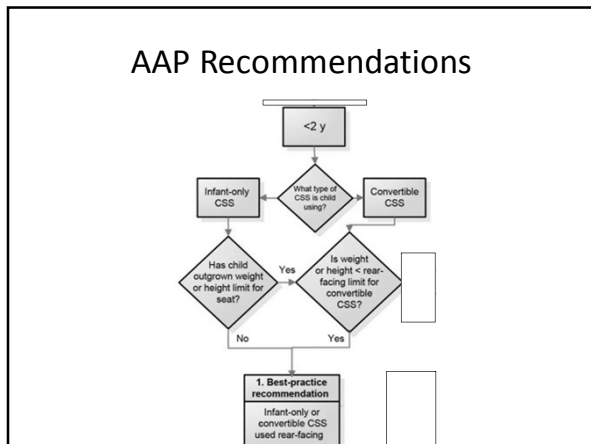
DESCRIPTION (RESTRAINT TYPE)

A REAR-FACING CAR SEAT is the best seat for your young child to use. It has a harness and in a crash, cradles and moves with your child to reduce the stress to the child's fragile neck and spinal cord.
A FORWARD-FACING CAR SEAT has a harness and tether that limits your child's forward movement during a crash.
A BOOSTER SEAT positions the seat belt so that it fits properly over the stronger parts of your child's body.
A SEAT BELT should lie across the upper thighs and be snug across the shoulder and chest to restrain the child safely in a crash. It should not rest on the stomach area or across the neck.

www.facebook.com/childpassengersafety
<http://twitter.com/childseatsafety>
 March 21, 2011

Age Group	Type of Seat	General Guidelines
Infants/ Toddlers	Rear-facing only seats and rear-facing convertible seats	All infants and toddlers should ride in a Rear-Facing Car Seat until they are at least 2 years of age or until they reach the highest weight or height allowed by their car seat's manufacturer.
Toddlers/ Preschoolers	Convertible seats and forward-facing seats with harnesses	Any child who has outgrown the rear-facing weight or height limit for his convertible car seat should use a Forward-Facing Car Seat with a harness for as long as possible, up to the highest weight or height allowed by the car seat manufacturer.
School-Aged Children	Booster seats	All children whose weight or height is above the forward-facing limit for their car seat should use a Belt-Positioning Booster Seat until the vehicle seat belt fits properly, typically when they have reached 4 feet 9 inches in height and are between 8 and 12 years of age.
Older Children	Seat belts	When children are old enough and large enough for the vehicle seat belt to fit them correctly, they should always use Lap and Shoulder Seat Belts for optimal protection. All children younger than 13 years should be restrained in the rear seats of vehicles for optimal protection.

Rear-Facing







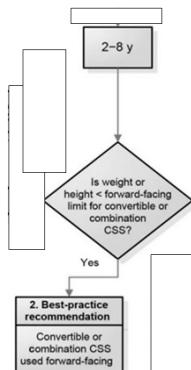


RF versus FF



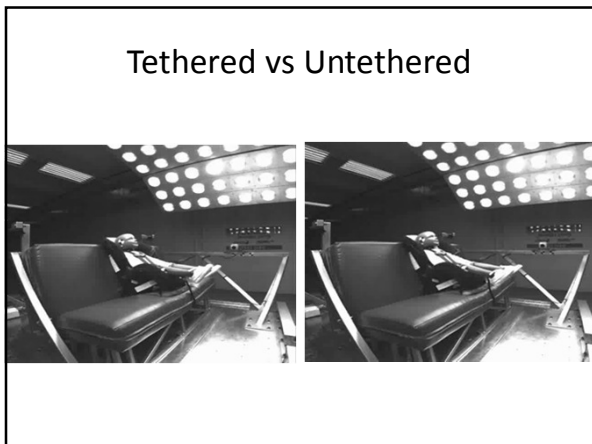
Forward-Facing w/Harnesses

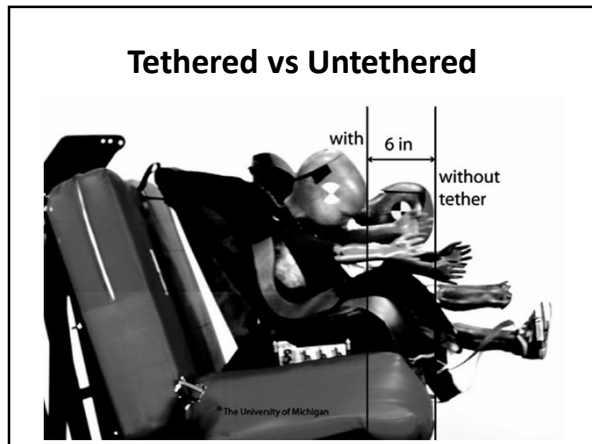
AAP Recommendations

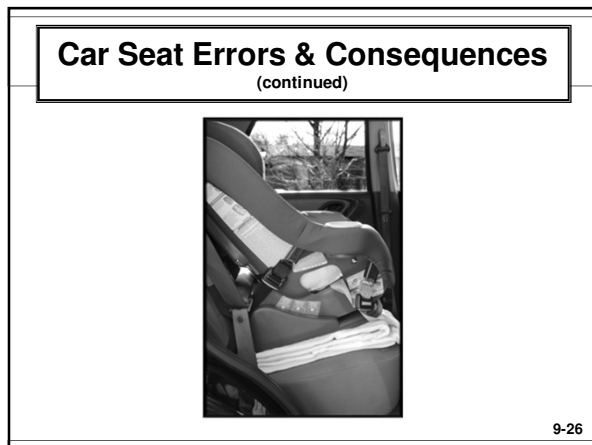














Harness Fit

- Snug harness lies flat and passes pinch test
- Sit with back and bottom flat against car seat back
- Harness placed through proper slots, usually at or above child's shoulders
- Harness straps placed over the shoulders and buckled at crotch
- Retainer clip at armpit level



9-25



Common Car Seat Installation Errors

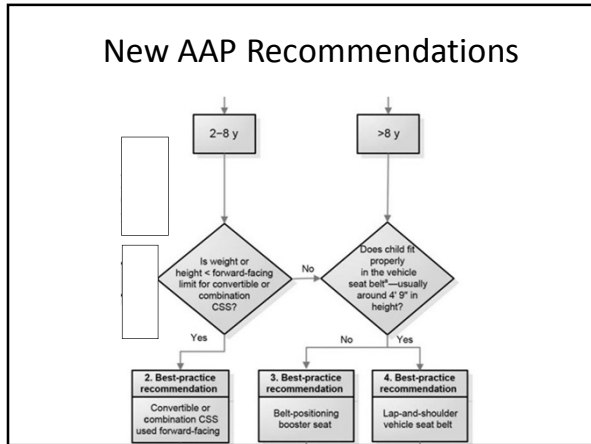
- Seat belt or lower anchor connector that is too loose or not locked
- Rear-facing-only car seat that is forward-facing
- Seat belt or lower anchor connectors routed incorrectly through wrong belt path
- Recline angle not adjusted appropriately for forward-facing direction
- Using 2 seat belts or using a seat belt and lower anchor connectors together (unless allowed)

9-13





Boosters

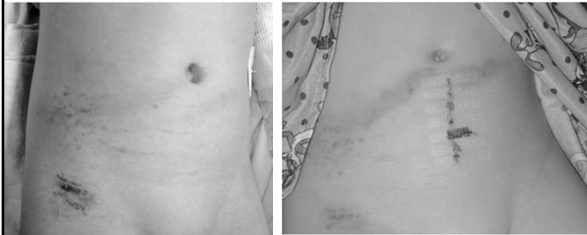






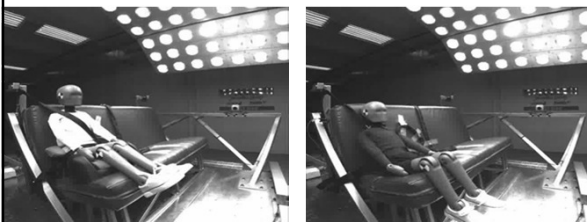


Injury Ex. – Bladder Rupture



Photos: CIREN

Booster vs. Belt Only





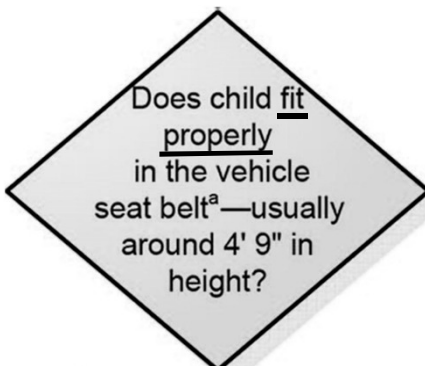






Seat Belts

AAP Recommendations



NHTSA Recommendations

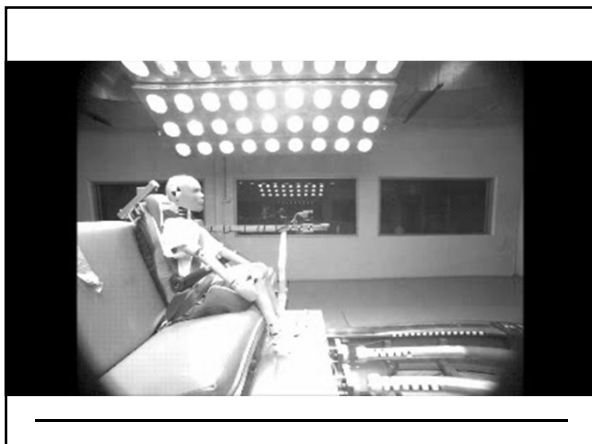


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Other Misuse

Tempting... Check Everything!





Why use the center position?

Is “cocooning” needed?







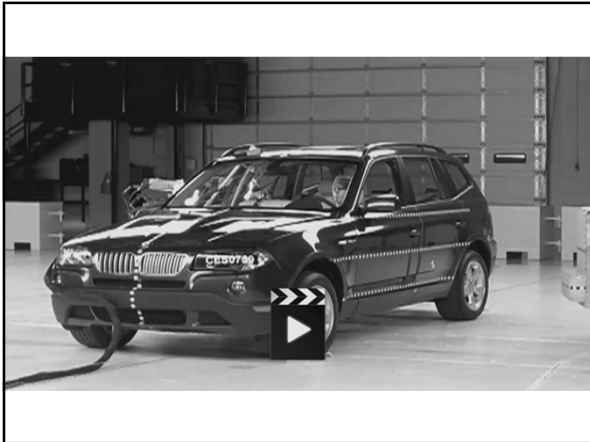


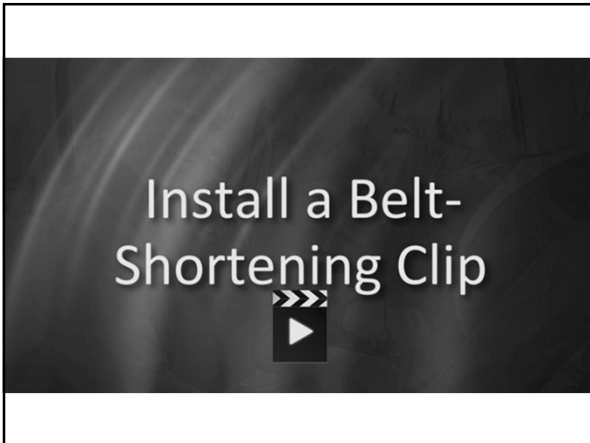


U.S. Resources For YOU!

"Job Aids" Including Video Tools

- cpsboard.org/links-for-techs
 - Glossary
 - Terminology translation (Spanish)
 - Resources / contacts
 - Recall list link
 - Other former appendix items
- www.youtube.com/user/cpsboard
 - Crash test videos
 - Installation videos (job aids)





Questions?

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